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PLANTS & ANIMALS OF WHITE SANDS



A Discussion of
Dunes Ecology With
Revised Checklists

White Sands National Monument
New Mexico

INTRODUCTION

The White Sands is a sea of graceful white gypsum dunes - a landscape of stark natural beauty. The absence of plant life in the interior of the dune field is indicative of the harsh physical conditions that prevail. There, only a few grasses and small shrubs, along with small rodent and reptile life, are able to survive for a time between the endlessly migrating dunes.

However, on the margins of the White Sands, the dunes have become relatively heavily populated with flora and fauna able to withstand such physical conditions. These are there now because over the generations a few naturally vigorous plants became established, slowing the rate of dune movement enough to allow others to take a foothold. This developing plant community attracted animal life from the adjacent desert, which became fit to live on the dunes through evolutionary adaptation. Thus, the marginal dunes are now an ecological complex of unexpected variety and diversity.

This guide combines previously compiled, revised checklists of plants and animals of the White Sands. The following discussion of the ecological aspects of the dunes should help the observer to locate and identify individual species, especially plants. By placing the checklists in ecological context, it is hoped that the observer will come to think of each plant or animal as a member of a life community interrelating with the dune movement.

ECOLOGICAL ASPECTS

Ecology is the study of the interrelationships between plants and animals and their physical surroundings. It is literally a study of the home or household of living things. In understanding the ecology of the White Sands, several rather distinct homes or, what is commonly termed habitats, must be considered. Most of these habitats are named in terms of the physical surroundings because, as in most arid lands, the inorganic part of the environment is the most prominent and has the greatest influence on the organic parts.

Marginal Dunes. These extend into the dune field two or three miles from its southern and eastern boundary. Most of the dunes in this habitat are scattered and are separated by large grassland areas. Although the dunes are still the prominent feature here, the effects of vegetation in slowing the rate of dune movement is very evident. Large shrubs such as Skunkbush Sumac (Rhus aromatica) and Hoary Rosemarymint (Poliomintha incana) anchor the edges of the dunes, allowing movement only in the central portion, thus the dune becomes parabolic shaped. Small rodents, such as the Plains Pocket Mouse (Perognathus flavescens gypsi) find the bases of these shrubs to be good places for ready-made shelter, as does the Bleached Earless Lizard (Holbrookia maculata). Hiding among scattered clumps of

dwarfed Rio Grande Cottonwoods (Populus wislizenia) are occasional porcupines, a mammal that seems very out of place in the dunes. Soaptree Yucca (Yucca elata) is found scattered throughout the area near the foot of relatively stabilized dunes. The most showy annuals include Woolly Paperflower (Psilostrophe tagentia), which stands out against the white dunes in bright yellow clumps, and the tall stalks of the Soft Orange Globemallow (Sphaeralcea incana), both being early fall varieties.

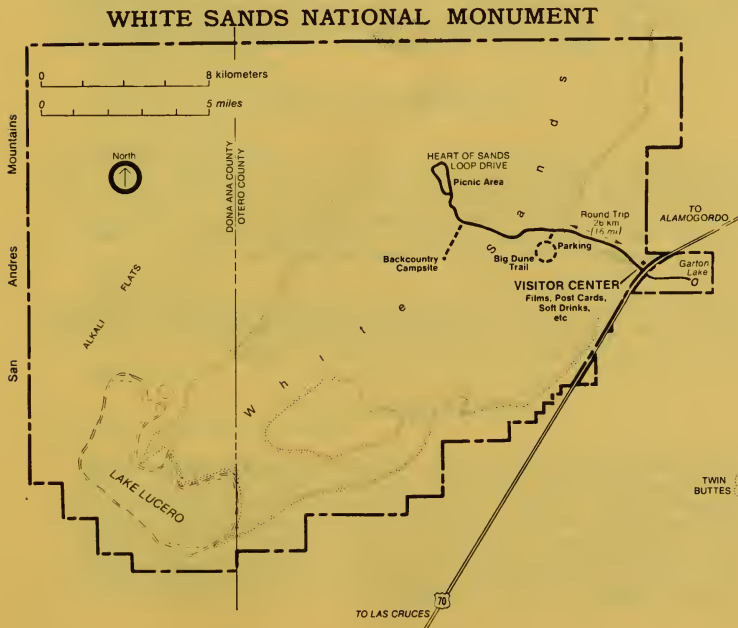
Transverse and Barchan Dunes. Here, the physical forces of nature reign supreme. These large freemoving dunes creep forward many feet per year, overwhelming all plant life in their paths. Only a few hearty species are able to live in the interdunal flats until they are covered by sand. This environment, known as the Abronia (Sand Verbena) association, is characterized by openings invaded first by Evening Primrose. These pioneers occupy the lee slope of the migrating dunes, the most recently created portion of the interdunal flat. Moving out toward the center (older portion) of the flat, the Primrose is replaced by Indian Ricegrass and, later, Groundsel. The last plants to invade are Sand Verbena, Ephedra, Greenthread, and, finally, Alkali Sacaton. White lizards are commonly seen scurrying between plants on warm, sunny days. Sand Verbena (Abronia angustifolia), common in most parts of the white sands in the spring and summer, produces colorful pink blooms against the sterile white of the dune flats.

Alkali Flats and Lake Lucero. The transverse-barchan dunes grade to the west into a narrow zone of embryonic dunes. The latter mark the eastern boundary of the alkali flats. Here alkali conditions prevent the growth of plant life except for a few scattered grasses and a scaley pseudo-evergreen known as Pickleweed (Allenrolfea occidentalis). Fauna is very scarce, but white lizards have been observed using missile fragments for cover. There is no plant growth in the dry bed of Lake Lucero due to extreme alkaline conditions and infrequent flooding. However, alkaline-tolerant grasses sparsely fringe the shore of the lake.

Alluvial Fans. The alluvial fans at the base of the San Andres Mountains have coalesced to form a broad slope known as a bajada. The lowermost slopes of this extend into the monument and border the alkali flats on the west. The bajada is cut at frequent intervals by deep washes or arroyos that empty onto the flats and Lake Lucero. Large Honey Mesquite (Prosopis glandulosa) hummocks are the dominant vegetative feature, and provide burrowing places for a variety of rodent life, which in turn provides food for larger mammals including the badger. Other animals include coyote, fox and birds, such as the roadrunner. Birds of prey include the Redtail Hawk and Loggerhead Shrike. The mesquite community soon gives way to Creosote Bush higher up on the slopes, near the monument boundary.

Saltbush Flats. The center of this high desert basin, the Tularosa, is vegetated mainly by Four Wing Saltbush (Atriplex canescens) and sparse bunch grasses. As grazing land, it is now very poor but, in the 1800's

before the introduction of range cattle, it supposedly was predominantly grassland having more of the appearance of plains than desert. A combination of drought and overgrazing allowed the hearty saltbush to take over. The eastern and southern edges of the marginal dunes are bordered by this grey-green shrub. Migrating mammals such as the Kit Fox, Grey Fox and Coyote are more native to the desert than the dunes. These mammals cross over into the marginal dunes to prey on the abundant rodent life there. In the spring, the grey-green monotony of the saltbush flats is broken by an occasional splash of bright red blossoms of the Flaming Torch Hedgehog Cactus (*Echinocereus triglochidiatus*); or a stand of Golden Crownbeard (*Verbesina encelioides*) in the fall.



CLIMATIC FACTORS

This high desert basin, averaging 4,000 feet in elevation, is subject to harsh and sometimes rapidly changing climatic conditions. Summers are hot, averaging 95°F highs in July and August, with frequent readings over 100°F. Winters are relatively mild, but nighttime temperatures often go below freezing and cold spells can send the mercury to below zero. The lowest temperature on record is a -25°F. Snowfall is infrequent, but heavy snows have occurred on occasion. Precipitation averages about eight inches per year, with most of this occurring during summer thunderstorms, often accompanied by heavy hail.

Wind is the dominant climatic factor here, especially from February through May. The prevailing southerly winds blow unimpeded across the desert and at times reach gale proportions. Storms sometimes last for several days in the spring. This is the time of greatest dune movement, when living conditions for dune plant and animal communities become extremely harsh.

ENVIRONMENTAL STUDY AREAS

As part of the National Park Service Cooperative Program for Environmental Conservation, a National Environmental Study Area (NESA) has been established at White Sands National Monument. Big Pedestal is located on the dune field margin two miles west of monument headquarters. The Big Pedestal area is an ecological model of the dynamic relations between plants and animals occurring throughout the dune field.

This area has been set aside for use primarily by grade school groups from local school systems. However, any educational group may make use of the area for geological or biological studies through prior arrangement with the Superintendent, White Sands National Monument.

PLANT AND ANIMAL CHECKLISTS

The following checklists have been compiled by various qualified individuals over the years since White Sands was established as a National Monument in 1933. Much of the work has been done by National Park Service personnel. The latest plant list has resulted from an extensive study by the University of Texas-El Paso. No attempt has been made to list the names of the individuals involved. Substantial contributions resulting in published works are listed in the "Bibliography of Publications Relating to the White Sands."

CHECKLIST FOR PLANTS

DIVISION - CYANOCHLORONTA (Blue-Green Algae)

Oscillatoria sp.

DIVISION - CHLOROPHYTA (Green Algae)

Chlamydomonas sp.

Microcoleus paludosus

Microcoleus vaginatus

Nostoc spp.

Palmogloea protuberans

Pleconema nostocorum

Schizothrix californica

Schizothrix lamyi

Scytonema hofmannii

DIVISION - CHAROPHYTA (Stone Worts)

Nitella sp.

DIVISION - EUGLENOPHYCOPHYTA (Euglendids)

Euglena sp.

DIVISION - THALLOPHYTA (Lichens)

Dermatocarpon lachneum

Fulgensia sp.

Physia aipolia

Psora sp.

Psora decipiens

DIVISION - SPERMATOPHYTA

GYMNOSPERMAE (Non-flowering Plants)

EPHEDRACEAE (Ephedra Family)

Ephedra torreyana

Mormon Tea

Ephedra trifurca

Canatilla

ANGIOSPERMAE (Flowering Plants) MONOCOTYLEDONAE

CYPERACEAE (Sedge Family)

Scirpus maritimus

Salt-Marsh Bulrush

JUNCACEAE (Rush Family)

Juncus mexicanus

Rush

LILIACEAE (Lily Family)

Yucca elata

Soaptree Yucca

Yucca baccata

Datil Yucca

POACEAE (Grass Family)

TRIBE (4) ABUNDINEAE

Arundo donax

Giant Reed

TRIBE (8) STIPEAE

Oryzopsis hymenoides

Indian Ricegrass

TRIBE (13) ERAGROSTEAE

Erioneuron pelchellum
Muhlenbergia arenacea
Muhlenbergia pungens
Scleropogon brevifolius
Sporobolus airoides
Sporobolus contractus
Sporobolus cryptandrus
Sporobolus flexuosus
Sporobolus giganteus
Sporobolus nealleyii

Fluff Grass
Ear Muhly
Sandhill Muhly
Burrograss
Alkali Sacaton
Spike Dropseed
Sand Dropseed
Mesa Dropseed
Giant Dropseed
Gypgrass

TRIBE (14) CHLORIDEAE

Bouteloua barbata
Bouteloua breviseta
Bouteloua gracilis
Chloris virgata
Hilaria mutica

Six-weeks Grama
Gyp Grama
Blue Grama
Feather Fingergrass
Tobosa Grass

TRIBE (16) AELUROPODEAE

Distichlis spicata

Inland Saltgrass

TRIBE (19) ARISTIDEAE

Aristida adscensionis

Six-weeks Threeawn

TRIBE (20) PANICEAE

Setaria leucopila

Plains Bristlegrass

TRIBE (21) ANDROPOGONEAE

Schizachyrium scoparium

Little Bluestem

RUPPIACEAE (Ditch-grass Family)

Ruppia maritima

Widgeongrass

TYPHACEAE (Cattail Family)

Typha angustifolia

Narrow-leaved Cattail

Typha latifolia

Common Cattail

ANGIOSPERMAE (Flowering Plants) DICOTYLEDONAE

AIZOACEAE (Carpet-weed Family)

Trianthema portulacastrum

Horse Purslane

AMARANTHACEAE (Amaranth Family)

Amaranthus retroflexus

Pigweed

Tidestromia lanuginosa

Wooly Tidestromia

ANACARDIACEAE (Cashew Family)

Rhus aromatica

Squaw-bush Sumac

APOCYNACEAE (Dogbane Family)

Amsonia arenaria

Blue-Star

ASCLEPIADACEAE (Milkweed Family)

Asclepias arenaria

Broadleaf Milkweed

Asclepias subverticillata

Poison Milkweed

ASTERACEAE (Composite Family)

TRIBE (3) ASTEREAE

<u>Baccharis bigelovii</u>	Bigelow Baccharis
<u>Baccharis glutinosa</u>	Seepwillow Baccharis
<u>Baccharis salicina</u>	Willow Baccharis
<u>Chrysothamnus nauseosus</u>	Rubber Rabbitbrush
<u>Chrysothamnus pulchellus</u>	Southwest Rabbitbrush
<u>Erigeron arenarius</u>	Fleabane
<u>Isocoma heterophyllus</u>	Jimmy-weed
<u>Isocoma wrightii</u>	Goldenweed
<u>Machaeranthera linearis</u>	Sand Goldenweed
<u>Machaeranthera parviflora</u>	Wild Aster
<u>Machaeranthera scabrella</u>	
<u>Machaeranthera tanacetifolia</u>	Tohoka Daisy
<u>Xanthocephalum microcephalum</u>	Three Leaf Snakeweed
<u>Xanthocephalum sarothrae</u>	Broom Snakeweed

TRIBE (5) HELIANTHEAE

<u>Dicranocarpus parvilflorus</u>	Pitchfork
<u>Flourensia cernua</u>	American Tarbush
<u>Helianthus annuus</u>	Common Sunflower
<u>Helianthus petiolaris</u>	Prairie Sunflower
<u>Hymenoclea monogyra</u>	Singlewhorl Burro-brush
<u>Thelesperman megapotamicum</u>	Greenthread
<u>Verbesina encelioides</u>	Golden Crownbeard
<u>Zinnia grandiflora</u>	Rocky Mountain Zinnia

TRIBE (6) HELENIEAE

<u>Clappia suadaefolia</u>	Clappia
<u>Hymenopappus arenosus</u>	Hymenopappus
<u>Hymenopappus filifolius var. cinerius</u>	Yellow Cutleaf

(continued)

TRIBE (6) HELENIEAE (continued)

<u>Pectus angustifolia</u>	Lemonweed
<u>Psilostrophe tagetina</u>	Woolly Paperflower
<u>Sartwellia flaveriae</u>	Threadleaf Sartwell

TRIBE (8) SENECTIONEAE

<u>Senecio longilobus</u>	Threadleaf Groundsel
<u>Senecio ridellii</u>	Ridell Groundsel
<u>Senecio spartiodes</u>	Broom Groundsel

TRIBE (9) CYAREAE

<u>Centaurea repens</u>	Russina Knapweed
<u>Cirsium wheeleri</u>	Wheeler Thistle

TRIBE (10) MUTISIEAE

<u>Perezia nana</u>	Desert Holly
<u>Bahia absinthifolia</u>	Bahia

BIGNONIACEA (Bignonia Family)

<u>Chilopsis linearis</u>	Desert Willow
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BORAGINACEAE (Borage Family)

<u>Tiquilia hispidissima</u>	Purple Borage
<u>Cryptantha fuluocanescens</u>	Yellow Cryptantha
<u>Heliotropium greggii</u>	Heliotrope

BRASSICACIAE (Mustard Family)

<u>Descurainia pinnata</u>	Tansy-mustard
<u>Dimorphocarpa wislizenii</u>	Spectacle-Pod
<u>Diplotaxis tenuifolia</u>	Slimleaf Wallrocket
<u>Lepidium montanum var. alyssoides</u>	Pepperweed
<u>Lesquerella fendleri</u>	Bladderpod
<u>Nerisyrenia camporum</u>	Velvety Nerisyrenia
<u>Nerisyrenia linearifolia</u>	Narrowleaf Greggia
<u>Sisymbrium irio</u>	London Rocket
<u>Streptanthus arizonicus</u>	Arizona Jewel Flower

CACTACEAE (Cactus Family)

<u>Coryphantha fragrans</u>	
<u>Coryphantha macromeris</u>	Nipple Beehive Cactus
<u>Coryphantha sheeri var. uncinata</u>	Needle Beehive Cactus
<u>Coryphantha vivipara var. vivipara</u>	Biscuit Cactus
<u>Echinocactus horizionthalonius</u> <u>var. horizionthalonius</u>	Blue Barrel Cactus
<u>Echinocereus fendleri var. rectispinus</u>	Fendler Needle-Spine Hedgehog
<u>Echinocereus triglochidiatus</u> <u>var. gonacanthus</u>	Claret Cup Hedgehog
<u>Opuntia arborescens</u>	Staghorn Cholla
<u>Opuntia imbricata</u>	Tree Cholla
<u>Opuntia kleiniae var. kleiniae</u>	Klein Pencil Cholla
<u>Opuntia leptocaulis</u>	Desert Christmas Cactus
<u>Opuntia macrorhiza</u>	Tuberous-Rooted Prickly Pear
<u>Opuntia macrorhiza var. pottsii</u>	Plains Prickly Pear
<u>Opuntia phaeacantha var. discata</u>	Desert Prickly Pear
<u>Opuntia polyacantha var. rufispina</u>	Red-Spined Prickly Pear
<u>Opuntia violacea var. macrocentra</u>	Purple Prickly Pear
<u>Pediocactus papyracanthus</u>	Paper-Spine Plains Cactus

CHENOPODIACEAE (Goosefoot Family)

<u>Allenrolfea occidentalis</u>	Pickle-weed
<u>Atriplex canescens</u>	Four-wing Saltbush
<u>Salsola kali var. tenuifolia</u>	Russian Thistle
<u>Suaeda depressa</u>	Seepweed
<u>Suaeda suffrutescens</u>	Desert Seepweed
<u>Suaeda torreyana</u>	Torrey Seepweed

CONVOLVULACEAE (Morning Glory Family)

<u>Cressa depressa</u>	Silky Cressa
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CUCURBITACEAE (Gourd Family)

<u>Cucurbita foetidissima</u>	Buffalo Gourd
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EUPHORBIACEAE (Spurge Family)

<u>Croton dioicus</u>	Croton
<u>Euphorbia albomarginata</u>	Whitemargin Spurge
<u>Euphorbia lata</u>	Hoary Euphorbia
<u>Euphorbia serrula</u>	Sawtooth Spurge

FABACEAE (Pea Family)

<u>Astragalus allorchrous</u>	Halfmoon Loco
<u>Cassia lindheimeriana</u>	Senna
<u>Dalea scoparia</u>	Broom Pea
<u>Hoffmanseggia glauca</u>	Hog-Potato
<u>Melilotus officinalis</u>	Yellow Sweet Clover
<u>Prosopis glandulosa</u>	Honey Mesquite

FOUQUIERIACEAE (Ocotillo Family)

<u>Fourquieria splendens</u>	Ocotillo
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FRANKENIACEAE (Frankenia Family)

<u>Frankenia jamesii</u>	Frankenia
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GENTIANACEAE (Gentian Family)

<u>Centaurium texense</u>	Centaury
<u>Eustoma exaltatum</u>	Catch-Fly Gentian
<u>Eustoma grandiflorum</u>	Bluebell

HYDROPHYLLACEAE (Waterleaf Family)

<u>Nama carnosum</u>	Gype Nama
<u>Nama hispidum</u>	Hispid Nama
<u>Phacelia corrugata</u>	Blue-Curls
<u>Phacelia crenulata</u>	Scorpionweed
<u>Phacelia integrifolia</u>	Scalloped Phacelia
<u>Phacelia robusta</u>	Phacelia

KOEBERLINIACEAE (Junco Family)

<u>Koeberlinia spinosa</u>	Spiny All-thorn
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LAMIACEAE (Mint Family)

<u>Poliomintha incana</u>	Hoary Rosemarymint
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LOASACEAE (Stick-leaf Family)

<u>Cevallia sinuata</u>	Cevallia
<u>Mentzelia integra</u>	Blazingstar
<u>Mentzelia multiflora</u>	Desert Mentzelia
<u>Mentzelia pumila</u>	Stick-leaf

MALVACEAE (Mallow Family)

<u>Sida leprosa</u> var. <u>depauperata</u>	Scuffy Sida
<u>Sphaeralcea angustifolia</u>	Narrow-leaf Globemallow
<u>Sphaeralcea arenaria</u>	Globemallow
<u>Sphaeralcea incana</u>	Soft Globemallow
<u>Sphaeralcea subhastata</u>	Globemallow

NYCTAGINACEAE (Four O'clock Family)

<u>Abronia angustifolia</u>	Sand Verbena
<u>Allionia choisyi</u>	Smooth Trailing Four O'clock
<u>Allionia incanata</u>	Trailing Four O'clock
<u>Ammocodon chenopodoides</u>	Goosefoot Moonpod
<u>Mirabilis multiflora</u>	Colorado Four O'clock
<u>Selinocarpus diffusus</u>	Spreading Moonpod
<u>Selinocarpus lanceolatus</u>	Gyp Moonpod

ONAGRACEAE (Evening Primrose Family)

<u>Calylochus hartwegii</u>	Yellow Evening Primrose
<u>Gaura coccinea</u>	Scarlet Gaura
<u>Gaura parviflora</u>	Lizard Tail
<u>Oenothera albricaulis</u>	Prairie Evening Primrose
<u>Oenothera pallida runcinata</u>	White Evening Primrose

PAPAVERACEAE (Poppy Family)

<u>Argemone polyanthemus</u>	Prickly Poppy
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PLUMBAGINACEAE (Leadwort Family)

<u>Limonium limbatum</u>	Sea-lavender
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POLEMONIACEAE (Phlox Family)

<u>Ipomopsis pumila</u>	Low Gilia
<u>Ipomopsis longiflora</u>	Pale Trumpets

POLYGONACEAE (Buckwheat Family)

<u>Eriogonum rotundifolium</u>	Round Leaf Wild Buckwheat
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RHAMNACEAE (Buck-thorn Family)

<u>Condalia spathulata</u>	Knifeleaf Condalia
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SALICACEAE (Willow Family)

<u>Populus angustifolia</u>	Narrowleaf Cottonwood
<u>Populus wislizenii</u>	Rio Grande Cottonwood
<u>Salix gooddingii</u>	Goodding Willow

SANTALACEAE (Sandlewood Family)

<u>Comandra pallida</u>	Bastard-toadflax
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SOLANACEAE (Potato Family)

<u>Datura wrightii</u>	Jimson Weed
<u>Lycium berlandieri</u> var. <u>parviflorum</u>	Terrac Wolfberry
<u>Lycium pallidum</u>	Pale Wolfberry
<u>Lycium torreyi</u>	Torrey Wolfberry
<u>Solanum elaeagnifolium</u>	Silverleaf Nightshade

TAMARICACEAE (Tamarix Family)

<u>Tamarix gallica</u>	Salt Cedar
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VERBENACEAE (Verbena Family)

Phyla incisa

Texas Frog-fruit

Verbena bracteata

Prostrate Vervain

ZYGOPHYLLACEAE (Caltrop Family)

Kallstroemia hirsutissima

Carpetweed

Larrea tridentata

Creosote Bush



Revised 1987

SYNONYMY

FOR

Andropogon scopartus
Andropus carnosus
Aplopappus spinulosus
Aster cichoriaceus
Aster linearis
Aster parvulus
Aster tenacetifolius
Centaurea picris
Chrysothamnus latisquameus
Cladotrix lanigulosa
Comandra umbellata
Crassina grandiflora
Cressa truxillensis
Dicranocarpus dicranocarpus
Distichlis stricta
Dithyrea wislizenii
Dondia moquini
Dondia suffrutescens
Erythrea texense
Gilia pumila
Greggia camporum
Greggia linearifolia
Gutierrezia sarothra
Haplopappus heterophyllus
Haplopappus spinulosus
Heterospermum dicranocarpum
Hoffmanseggia densiflora

(continued)

SEE

Schizachyrium scoparium
Nama carnosum
Haplopapus spinulosus
Machaeranthera chichoriaceus
Machaeranthera linearis
Machaeranthera parviflora
Machaeranthera tenacetifolia
Centaurea repens
Chrysothamnus naseosus
Tidestroma lanigulosa
Commandra pallida
Zinnia grandiflora
Cressa depressa
Dicranocarpus paryiflora
Distichlis spicata
Dimorphocarpa wislizenii
Suada torreyana
Suada suffrutescens
Centarium texense
Ipomopsis pumila
Nerisyrenia camporum
Nerisyrenia linearifolia
Xanthocephalum sarothrae
Isocoma wrightii
Machaeranthera pinnatifida
Dicranocarpus parviflora
Hoffmanseggia glauca

SYNONYMY (continued)

Lepidium alyssoides

Lippia incisa

Nuttallia procera

Opuntia engelmannii

Oenothera hartwegii

Oenothera lavandulifolia

Oenothera runcinata

Phacelia corrugata

Rhus trilobata

Schmalitzia emoryi

Scripus brittonianus

Scirpus paludosus

Selinocarpus chenopodioides

Sida lepidota

Sideranthus australi

Sphaeralcea lobata

Sporobolus asperifolia

Sporobolus strictus

Thelesperma gracile

Wootonia parviflora

Lepidium montanum

Phyla incisa

Mentzelia pumila

Opuntia phaeacantha discata

Calylophus hartwegii

Calylophus hartwegii

Oenothera pallida runcinata

Phacelia crenulata

Rhus aromatica

Rhus aromatica

Scripus maritimus

Scirpus maritimus

Ammocodon chenopodioides

Sida leprosa

Machaeranthera australis

Sphaeralcea angustifolia

Muhlenbergia asperifolia

Sporobolus contractus

Thelesperma megapotamicum

Dicranocarpus parviflora

CHECKLIST OF MAMMALS

(A) Abundant (C) Common (R) Rare

<u>Taxidea taxus</u>	Badger (C)
<u>Tadarida brasiliensis</u>	Bat; Brazilian freetail (C)
<u>Myotis californicus</u>	Bat; California Myotis (C)
<u>Antrozous pallidus</u>	Bat; Pallid (C)
<u>Lynx rufus</u>	Bobcat (R)
<u>Sylvilagus auduboni</u>	Cottontail; Desert (C)
<u>Canis latrans</u>	*Coyote (C)
<u>Urocyon cinereoargenteus</u>	*Fox; Grey (C)
<u>Vulpes macrotis</u>	*Fox, Kit (C)
<u>Geomys arenarius</u>	Gopher; Desert pocket (A)
<u>Pappogeomys castanops</u>	Gopher; Yellow-faced pocket (R)
<u>Spermophilus spilosoma</u>	Ground squirrel; Spotted (C)
<u>Lepus californicus</u>	Jackrabbit; Blacktail (C)
<u>Dipodomys spectabilis</u>	*Kangaroo rat; Bannertail (C)
<u>Dipodomys merriami</u>	Kangaroo rat; Merriman (R)
<u>Dipodomys ordii</u>	Kangaroo rat; Ord (C)
<u>Felis concolor</u>	Mountain lion (R)
<u>Peromyscus eremicus</u>	Mouse; Cactus (C)
<u>Peromyscus maniculatus</u>	Mouse; Deer (C)
<u>Onychomys leucogaster</u>	Mouse; Northern grasshopper (R)
<u>Onychomys torridus</u>	Mouse; Southern grasshopper (R)
<u>Perognatus penicillatus</u>	Mouse; Desert pocket (C)
<u>Perognathus flavescens gypsi</u>	*Mouse; Plains pocket (C)
<u>Perognathus flavus</u>	Mouse; Silky pocket (R)
<u>Reithrodontomys megalotis</u>	Mouse; Western harvest (R)
<u>Peromyscus leucopus</u>	Mouse; White-footed (C)
<u>Odocoileus hemionus</u>	Mule deer (R)
<u>Oryx gazella</u>	Oryx (C)

(continued)

CHECKLIST OF MAMMALS (continued)

(A) Abundant (C) Common (R) Rare

Erethizon dorsatum

Cynomys ludovicianus

Antilocapra americana

Sigmodon hispidus

Bassariscus astutus

Conepatus mesoleucus

Mephitis mephitis

Mustela frenata

Neotoma mexicana

Neotoma micropus

Neotoma albigula

*Porcupine (C)

Prairie dog; Blacktail (R)

Pronghorn antelope (R)

Rat; Hispid cotton (R)

Ringtail cat (R)

*Skunk; Hog-nosed (R)

*Skunk; Striped (R)

Weasel; Longtailed (R)

Woodrat; Mexican (C)

Woodrat; Southern plains (C)

Woodrat; White-throated (C)

*These frequent both marginal and interior dunes. Others are found mostly on marginal dunes.

Blacktail Jack Rabbit



Kangaroo Rat



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CHECKLIST OF REPTILES AND AMPHIBIANS

(A) Abundant (C) Common (R) Rare

Non-Poisonous Snakes

Sonora episcopa

Arizona elegans philipi

Tantilla n. nigriceps

Pituophis melanoleucus affinis

Rhinocheilus lecontei tessellatus

Hypsiglena torquata texana

Masticophis flagellum testaceus

Heterodon nasicus

Gylpion canum

Ground snake (R)

Painted desert glossy snake (R)

Plains blackheaded snake (C)

Sonora gopher snake (A)

Texas long-nosed snake (R)

Texas night snake (C)

Western coachwhip (C)

Western hognose snake (R)

Western hook-nose snake (R)

Poisonous Snakes

Sistrurus catenatus edwardsi

Crotalus viridis viridis

Crotalus atrox

Desert massasauga (R)

Prairie rattlesnake (A)

Western diamondback rattlesnake (C)

Lizards

Crotaphytus collaris

Sceloporus undulatus cowlesi

Uta stansburiana stejnegeri

Sceloporus magister bimaculosus

Holbrookia texana scitula

Holbrookia maculata ruthveni

Cnemidophorus inornatus

Crotaphytus wislizenii wislizenii

Cnemidophorus tigris marmoratus

(continued)

Collared lizard (C)

*Cowles prairie lizard (A)

Desert side-blotched lizard (A)

Desert spiny lizard (C)

+Greater earless lizard (A)

*Lesser earless lizard (bleached) (A)

Little striped whiptail (C)

Long-nosed leopard lizard (C)

+Marbled whiptail (A)

CHECKLIST OF REPTILES AND AMPHIBIANS (continued)

(A) Abundant (C) Common (R) Rare

Lizards (continued)

<u>Cnemidophorus neomexicaus</u>	New Mexican whiptail (C)
<u>Phrynosoma modestum</u>	Round-tailed horned lizard (C)
<u>Sceloporus undulatus consobrinus</u>	Southern prairie lizard (C)
<u>Phrynosoma cornutum</u>	Texas horned lizard (C)

Turtles

<u>Terrapene ornata luteola</u>	Yellow box turtle (R)
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Salamanders

<u>Ambystoma tigrinum mauertium</u>	Barred tiger salamander (R)
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Toads

<u>Bufo cognatus</u>	Great plains toad (C)
<u>Bufo punctatus</u>	Red-spotted toad (R)

Spadefoot toads

<u>Scaphiopus couchi</u>	Couchs spadefoot (C)
<u>Scaphiopus bombifrons</u>	Plains spadefoot (C)
<u>Scaphiopus hammondi</u>	Western spadefoot (C)

+ (Animals found primarily on the bajada west of Lake Lucero.)

* (Animals found only within the dune field.)

Frequency of occurrence refers only to the frequency these animals are encountered and does not indicate the actual abundance of the animal. Special thanks is given to Robert McKeever for his assistance in the preparation of this list.

INSECTS OF WHITE SANDS

ORDER - THYSANURA (Bristletails)

- | | |
|-----------------|----------------------|
| F. Machilidae | Jumping bristletails |
| F. Lepismatidae | Silverfish |

ORDER - COLLEMBOLA (Springtails)

- | | |
|------------------|--------------------|
| F. Entomobryidae | Common springtails |
|------------------|--------------------|

ORDER - ODONATA (Dragonflies and Damselflies)

- | | |
|-------------------|---------------------------|
| F. Libellulidae | Common skimmers |
| F. Aeshnidae | Darners |
| F. Coenagrionidae | Narrow-winged damselflies |

ORDER - ORTHOPTERA

- | | |
|-------------------|---------------------------|
| F. Gryllacrididae | Camel crickets |
| F. Blattidae | Cockroaches |
| F. Gryllidae | Crickets |
| F. Tettigoniidae | Long-horned grasshoppers |
| F. Mantidae | Mantids |
| F. Acrididae | Short-horned grasshoppers |
| F. Phasmatidae | Walking sticks |

ORDER - DERMAPTERA (Earwigs)

- | | |
|-------------|----------------|
| F. Labiidae | Little earwigs |
|-------------|----------------|

ORDER - HEMIPTERA (Bugs)

F. Notonectidae	Backswimmers
F. Nabidae	Damsel bugs
F. Belostomatidae	Giant water bugs
F. Coreidae	Leaf-footed bugs
F. Miridae	Leaf or Plant bugs
F. Pyrrhocoridae	Red bugs
F. Corizidae	Scentless plant bugs
F. Lygaeidae	Seed bugs
F. Scutelleridae	Shield-backed bugs
F. Pentatomidae	Stink bugs
F. Corixidae	Water boatmen
F. Gerridae	Water striders

ORDER - HOMOPTERA

F. Aphididae	Aphids
F. Cicadidae	Cicadas
F. Cicadellidae	Leafhoppers
F. Dictyopharidae	Planthoppers
F. Flatidae	Planthoppers
F. Cercopidae	Spittlebugs or Froghoppers

ORDER - NEUROPTERA

F. Myrmeleontidae	Antlions
F. Chrysopidae	Green lacewings

ORDER - COLEOPTERA (Beetles)

F. Anthicidae	Antlike flower beetles
F. Meloidae	Blister beetles
F. Silphidae	Carrion beetles
F. Cleridae	Checkered beetles

ORDER - COLEOPTERA (Beetles) continued

F. Elateridae	Click beetles
F. Tenebrionidae	Darkling beetles
F. Dermestidae	Dermestid beetles
F. Oedemeridae	False blister beetles
F. Carabidae	Ground beetles
F. Histeridae	Hister beetles
F. Coccinellidae	Ladybird beetles
F. Chrysomelidae	Leaf beetles
F. Cerambycidae	Long-horned beetles
F. Bupresitidae	Metallic wood-boring beetles
F. Dytiscidae	Predaceous diving beetles
F. Scarabaeidae	Scarab beetles
F. Curculionidae	Snout beetles
F. Malachiidae	Soft-winged flower beetles
F. Cicindelidae	Tiger beetles
F. Hydrophilidae	Water scavenger beetles
F. Bostrichidae	Branch and Twig borers

ORDER - LEPIDOPTERA (Butterflies and Moths)

F. Nymphalidae	Brush-footed butterflies
F. Gelechiidae	Gelechiid moths
F. Saturniidae	Giant silkworm moths
F. Lycaenidae	Gossamer-winged butterflies
F. Danaidae	Milkweed butterflies
F. Noctuidae	Noctuid moths
F. Hesperidae	Skippers
F. Sphingidae	Sphinx or Hawk moths
F. Papilionidae	Swallowtails
F. Pieridae	Whites, Sulfers, and Orange-tips
F. Incurvaridae	Yucca moths

ORDER - DIPTERA (Flies)

F. Bombyliidae	Bee flies
F. Calliphoridae	Blow flies
F. Tipulidae	Crane flies
F. Sarcophagidae	Flesh flies
F. Syrphidae	Flower flies
F. Tabanidae	Horse and Deer flies
F. Dolichopodidae	Long-legged flies
F. Culicidae	Mosquitoes
F. Otitidae	Picture-winged flies
F. Asilidae	Robber flies
F. Ephydriidae	Shore flies
F. Tachinidae	Tachinid flies

ORDER - HYMENOPTERA (Ants, Bees, Wasps)

F. Formicidae	Ants
F. Apidae	Digger, Carpenter, Honey and Bumble bees
F. Cynipidae	Gall wasps and others
F. Ichneumonidae	Ichneumons
F. Megachilidae	Leafcutting bees
F. Halictidae	Mining bees
F. Scoliidae	Scollid wasps
F. Sphecidae	Sphecid wasps
F. Pompilidae	Spider wasps
F. Tiphidae	Tiphid wasps and others
F. Mutillidae	Velvet ants
F. Vespidae	Vespid wasps
F. Colletidae	Yellow-faced and Plasterer bees

Arthropods Other Than Insects

CLASS: CHILOPIDA-CENTIPEDES

ORDER - SCOLOPENDROMORPHA

F. Scolopendridae Giant desert centipedes

CLASS: ARACHNIDA

ORDER - PEDIPALPIDA Whip-scorpions (Vinegaroon)

ORDER - SCORPIONIDA Scorpions

ORDER - SOLPUGIDA Wind-scorpions or Solpugids

ORDER - CHELONETHIDA Pseudoscorpions

ORDER - ACARINA Mites and Ticks

ORDER - ARANEIDA Spiders

F. Theridiidae Comb-footed spiders (Black widows)

F. Thomisidae Crab spiders

F. Salticidae Jumping spiders

F. Araneidae Orb-weavers

F. Theraphosidae Tarantulas

F. Lycosidae Wolf or Ground spiders

CHECKLIST OF BIRDS

A separate bird checklist entitled Sand and Feathers - Birds of White Sands National Monument is available, at no charge, at the monument information desk.

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